

### **REMARKS**

Claims 1-9, 13-15, and 18-66 are currently pending in this application. Claims 10-12 and 16-17 have been canceled. Claims 5, 19, and 66 have been amended. Claims 3-4, 13-15, 19-21, and 26-65 were previously withdrawn by the Applicants. Additionally, the Examiner has withdrawn claims 5-12, 16-18, and 66 as being drawn to a specie of a non-elected invention. Applicants have indicated these claims as withdrawn in the attached claim amendments, despite the discussion presented below arguing against the withdrawal of these claims. Applicants respectfully request the reconsideration of the withdrawal of claims 5-12, 16-18, and 66 and the timely allowance of the pending claims in light of the current amendment and arguments.

Applicants note that the amendment to withdrawn claim 19 merely corrects errors introduced in the Amendment dated December 27, 2002, which inadvertently changed the word "alkyl" to "alky." Therefore, this amendment to claim 19 neither adds any new matter nor constitutes a narrowing amendment.

### **Response to Election of Species Requirement**

Applicants would like to clarify for the record that, due to a restriction requirement, Applicants have elected the species of a copolymer of butyl acrylate and 3-(methylacrylamino) propyltrimethyl-ammonium chloride (MAPTAC) as a species of a cationic copolymer. In this regard, Applicants have herein amended claims 5 and 66 to recite these compounds. Therefore, these amendments do not add any new matter.

### **Status of Withdrawn Claims**

Applicants respectfully point out to the Examiner that pending claims 22-25, dependent upon pending claim 1, were not referred to the final Office Action. The Examiner, however, indicates on the Office Action Summary that claims 3-66 have been withdrawn from consideration. As no prior art is currently cited against claims 22-25, Applicants would like to thank the Examiner for the allowance of these claims or respectfully request the Examiner reinstate the claims as pending if they have indeed been withdrawn. *obv made up*

Additionally, Applicants respectfully request the Examiner reinstate claims 5-12, 16-18, and 66 in light of the present amendment to claims 5 and 66 and the following arguments pertaining to all of the pending claims.

The Examiner has withdrawn claims 5-12, 16-18, and 66 as being drawn to a non-elected specie of the invention. According to the Examiner, claims directed to "compositions of polymers made by the copolymerization of a backbone and a cationically charged monomer" must necessarily be limited to graft copolymers and are not enabled by the specification. (See Final Office Action (Paper No. 10) at 2.) Applicants respectfully disagree on both counts, as the instant claims are not limited to graft copolymers and they are fully and clearly enabled by the specification.

First of all, the Examiner has misapplied the legal standard for enablement. Notably, the MPEP directs that "[a] specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement . . . unless there is a reason to doubt the objective truth of the statements contained therein." (MPEP §

2164.04 (emphasis added).) Here, there is no reason to doubt that Applicants consider their invention as directed towards a polymer formed from the copolymerization of a backbone polymer and a cationic monomer, as this concept is well-detailed and enabled in the instant specification.

For example, the specification states that “[t]he cationically charged polymer contains one or more backbone compounds co-polymerized with one or more cationically charged monomers.” (Pg. 12, emphasis added.) Further, pages 7-8 of the specification detail that “[t]he polymer comprises a cationically charged monomer and a backbone co-polymerizable with the cationically charged monomer.” (Emphasis added.)

Applicants respectfully point out that the Examiner has further confused the issue by stating that “[a] backbone is not a monomer used to make a polymer backbone.” (Final Office Action (Paper No. 10) at 2.) As Applicants teach in the instant specification, and as would be understood by one of ordinary skill in the art, the backbone of the instant claims is not a “monomer used to make a polymer backbone,” but rather is a polymer copolymerizable with a cationically charged monomer. To argue otherwise, as the Examiner himself correctly points out, “is repugnant to the term’s (backbone) well-known usage.” (*Id.*) Indeed, Merriam-Webster’s online dictionary defines the term backbone as “the longest chain of atoms or groups of atoms in a usually long molecule (as a polymer or protein).” (see Exhibit A.)

This definition notably does not mandate that a backbone contain grafted side chains, but rather clearly indicates that a backbone is simply the longest chain in a molecule. Applying this definition to the subject matter and claims of the instant

application, the "atoms or groups of atoms" consist of a copolymer; the remaining portion or portions of the "usually long molecule" consist of cationically charged monomers copolymerizable with the backbone copolymer. Therefore, the "cationically charged monomer and a backbone co-polymerizable with the cationically charged monomer" of the present claims is fully enabled by the specification (see pgs. 7-8, 12, and 15-16) and is not limited to graft copolymers.

The Examiner has failed to demonstrate otherwise and has not indicated that there is any reason to doubt this common understanding of the backbone of the present invention. Therefore, Applicants respectfully request the reconsideration of the withdrawal of claims 5-12, 16-18, and 66 and the prompt allowance of the claims.

#### **Rejections under 35 U.S.C. § 112, First Paragraph**

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 112, first paragraph, alleging that "the specification . . . does not reasonably provide enablement for polymers formed from a backbone polymer and a cationic monomer." (Final Office Action (Paper No. 10) at 3.) The arguments presented above with respect to the enablement of claims 5-12, 16-18, and 66 apply with equal force to claims 1 and 2. Therefore, in light of Applicants' explanation of the definition of "backbone," which includes a polymer that is co-polymerizable with a cationically charged monomer, Applicants respectfully assert that claims 1 and 2 are fully enabled by the present specification.

**Rejections under 35 U.S.C. §§ 102(b) and 103(a)**

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, any of the references Mandeville et al., (U.S. Patent No. 6,007,803), Bister et al. (U.S. Patent No. 4,871,594), or Huth et al. (U.S. Patent No. 5,518,585). The Examiner has indicated that the preamble of claim 1 is not limiting in structure and that the cited references all disclose cationic polymers. However, Applicants respectfully submit that, as stated in the accompanying Declaration Under 37 C.F.R. § 1.132 of co-inventor Dr. Yulin Deng, none of the cited references teach or suggest a cationic polymer that is adhesive in nature or required by the claims.

Mandeville et al. does not teach or suggest a polymer with adhesive properties. Moreover, as this reference deals with cationic polymer for use as a toxin binding agent, Mandeville et al. is impermissibly derived from nonanalogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." M.P.E.P. § 2141.01(a) (quoting *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992)). Indeed, the Declaration of Yulin Deng highlights the differences between the toxin binders of Mandeville et al. and recyclable adhesive compositions like those of the present application. See ¶ 4. Those with ordinary skill in the art of adhesive coatings for paper would have no knowledge of or motivation to discover art in the field of toxin binding, and thus Applicants assert that Mandeville et al. is not properly asserted as a reference to either anticipate or render obvious claims 1-2.

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Further, neither Bister et al. nor Huth et al. teach or suggest cationic polymers for recyclable adhesives or adhesive paper coatings. Bister et al. teaches water insoluble cationic copolymers used for priming or impregnating an absorbent substrate; these copolymers do not form an adhesive. The Declaration of Yulin Deng discusses the differences between the primers of Bister et al. and the recyclable adhesives of the pending claims, noting that the primer polymers would not have adhesive properties. As a result, Applicants assert that Bister et al. does not anticipate or render obvious the pending claims and request the withdrawal of the rejections based on this reference.

Huth et al. teaches water insoluble cationic polymers used as internal paper sizing agents. According to the Declaration of Yulin Deng, the polymers of Huth et al. do not form an adhesive because they are plastics. Therefore, Huth et al. can neither anticipate nor render obvious the pending claims because it does not teach or suggest adhesive polymers. Applicants respectfully request the withdrawal of the rejections based on Huth et al.

In light of the Declaration of Yulin Deng filed herewith, and because independent claim 1 clearly requires the claimed polymer be a "recyclable adhesive or adhesive coating," Applicants respectfully request the withdrawal of the Examiner's rejections under §§ 102(b) and 103(a) and the timely allowance of claims 1-2 and all pending claims that depend therefrom.

### **Conclusion**

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1, 2, 5-9, 18, 22-25, and 66 in condition for

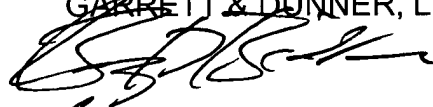
allowance. Applicants submit that the proposed amendments of claims 5, 19, and 66 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner. In addition, Applicants submit that the entry of the Amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's continued consideration of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: July 28, 2003

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